

REMARKS/ARGUMENTS

Claims 1 and 8 are amended to correct obvious typographical errors, i.e., β in line 1 of Claims 1 and 8; α in line 2 of Claims 1 and 8 and a degree symbol in line 10 of Claim 1 and lines 10 and 12 of Claim 8. Claims 1 and 8 have been amended in (A) and (C). No new matter has been added into the amended claims.

The rejection of Claims 1, 2, 4-9, 11-18, 20-29 and 36-43 under 35 U.S.C. §103(a), in view of the amendments submitted above, is respectfully traversed.

Independent Claims 1, 8 and 17 distinguish over the combination of references in three important aspects. First, by step (B) of the present claims, which recites “removing epichlorohydrin from said reaction solution and dissolving tris-(2,3-epoxypropyl)-isocyanurate in an organic solvent, wherein said solvent is acetonitrile, toluene, dioxane or dimethylformamide”. These solvents are not shown for use in step (B) of Ikeda et al. Second, Ikeda et al in step (A) use epichlorohydrin as a reaction substrate and as a solvent to produce a reaction solution. This means that any solvent in step (B) of Ikeda et al is a halogenated solvent, while the solvent in step (B) of the present claims is a non-halogenated solvent. Thirdly, the claims specify that the material remaining the crystals after step (D) of the present claims is epichlorohydrin having a content of at most 100 ppm, a limitation which is not taught or suggested in Ikeda et al, which shows the remaining epichlorohydrin content in the crystals produced in the process of Ikeda et al of only as low as 130 ppm or higher.

The Examiner argues on page 4 of the Official Action that it would be obvious to one trained in the art to adopt teachings of the combined references to remove as much epichlorohydrin as possible and then wash the resultant crystals to remove residual epichlorohydrin.

The specification on page 6, lines 14-17 of the specification discloses a conventional ratio of α -form tris-(2,3-epoxypropyl)-isocyanurate and β -form tris-(2,3-epoxypropyl)-isocyanurate in a ratio of 3:1. In Ikeda et al. the β -form crystals containing from 2 to 15 wt.% of α -form crystals are precipitated from tris-(2,3-epoxypropyl)-isocyanurate containing α -form and β -form crystals in a weight ratio of 3:1, using epichlorohydrin acting as a solvent and a reaction substrate. The α -form tris-(2,3-epoxypropyl)-isocyanurate is removed as an impurity from the surface of the precipitated β -form tris-(2,3-epoxypropyl)-isocyanurate crystals by washing with a solvent, as disclosed in column 8, lines 54-67 of Ikeda et al. The solvent referred to in the ninth aspect of the invention of Ikeda et al. in column 4, lines 46-53 is clearly directed to the use of a solvent only to remove by washing α -form crystals from the surface of the precipitated β -form crystals.

However, in the present claims β -form tris-(2,3-epoxypropyl)-isocyanurate crystals containing from 2 to 15 wt.% of α -form tris-(2,3-epoxypropyl)-isocyanurate in the interior of the crystals are precipitated from a tris-(2,3-epoxypropyl)-isocyanurate solution containing α -form crystals and β -form crystals in a weight ratio of 3:1 in a specific solvent of acetonitrile, toluene, dioxane or dimethylformamide. Therefore, the solvent (epichlorohydrin) used in the precipitation process to form crystals in Ikeda et al. is very different from the above-mentioned non-halogenated solvents used in the precipitation process to produce crystals in the present claims. Ikeda et al. do not teach or suggest any of the specific solvents of the present claims for use in dissolving tris-(2,3-epoxypropyl)-isocyanurate from which are precipitated β -form tris-(2,3-epoxypropyl)-isocyanurate crystals containing from 2 to 15 wt.% of

α -form tris-(2,3-epoxypropyl)-isocyanurate in the interior of the crystals with a remaining epichlorohydrin content of at most 100 ppm. A washing solvent, such as acetonitrile or dimethylformamide, disclosed in column 8 of Ikeda et al., is only used to wash and remove α -form crystals from the surface of β -form crystals and Ikeda et al. does not teach or suggest the use of acetonitrile or dimethylformamide to dissolve tris-(2,3-epoxypropyl) isocyanurate and then recrystallize the tris-(2,3-epoxypropyl)-isocyanurate, followed by gradual cooling of the solution to obtain β -form tris-(2,3-epoxypropyl)-isocyanurate containing from 2 to 15 wt.% of α -form tris-(2,3-epoxypropyl)-isocyanurate in the interior of the crystals with a remaining epichlorohydrin content of at most 100 ppm, as specified by the present claims.

The Examiner further argues on page 5 of the rejection Applicants have not shown that due to dissolution and reprecipitation alone the process reduces epichlorohydrin to 100 ppm. However, it is clear that the process of the present claims, which employs a specific non-halogenated solvent selected from the group consisting of acetonitrile, toluene, dioxane or dimethylformamide and gradually cooling at a specific cooling rate within 20°C/hr causes the remaining epichlorohydrin to be reduced to at most 100 ppm. Ikeda et al. or the combination of the Ikeda et al. with Tsukamoto et al. do not teach or suggest the use of the specific above-mentioned solvent in step (B) in combination with a specific cooling rate in step (C), but only show some epichlorohydrin in step (B) of the reference, which results in remaining epichlorohydrin of 130 ppm or higher, as shown in the examples of Ikeda et al.

Finally, on page 5 of the rejection the Examiner states that Applicants have not presented any comparative data showing that a halogenated solvent would not reduce

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the epichlorohydrin level. However, it is the position of Applicants that Ikeda et al do not demonstrate that their process, which is different from the process of the present claims by the fact that Ikeda et al do not use a solvent selected from the group consisting of acetonitrile, toluene, dioxane, or dimethylformamide in step (B) and only carry crystallization out in some epichlorohydrin, it is clear that the solvents in step (B) of Ikeda et al and the present claims are very different and no comparative data is necessary to distinguish the present claims from Ikeda et al or the combination of Ikeda et al and Tsukamoto et al. Also, Ikeda et al clearly do not teach or suggest that the produced crystals have a remaining epichlorohydrin content of at most 100 ppm. Therefore, the claims distinguish over the combination of references.

Accordingly, withdrawal of this ground of rejection is respectfully requested.

Applicants submit that the present application is in condition for allowance.

Early notice to this effect is earnestly solicited.

Respectfully submitted,

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